Unit 4: HTML & Structure Web Page

Introduction to HTML

HTML stands for Hyper Text Markup Language, which is the most widely used language on Web to develop web pages. HTML was created by Berners-Lee in late 1991 but "HTML 2.0" was the first standard HTML specification which was published in 1995. HTML 4.01 was a major version of HTML and it was published in late 1999. Though HTML 4.01 version is widely used but currently we are having HTML-5 version which is an extension to HTML 4.01, and this version was published in 2012.

- **Hyper text** refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.
- As its name suggests, HTML is a **Markup Language** which means you use HTML to simply "mark-up" a text document with tags that tell a Web browser how to structure it to display.

Structure of HTML Page

A typical HTML document will have the following structure −

```
<!DOCTYPE html>
<html>

   <head>
      Document header related tags
   </head>
```

```
   <body>
      Document body related tags
   </body>

</html>
```

<!DOCTYPE...>

This tag defines the document type and HTML version.

<html>

This tag encloses the complete HTML document and mainly comprises of document header which is represented by <head>...</head> and document body which is represented by <body>...</body> tags.

<head>

This tag represents the document's header which can keep other HTML tags like <title>, <link> etc.

<title>

The <title> tag is used inside the <head> tag to mention the document title.

<body>

This tag represents the document's body which keeps other HTML tags like <h1>, , <p> etc.

HTML Comments

Comment is a piece of code which is ignored by any web browser. It is a good practice to add comments into your HTML code, especially in complex documents, to indicate sections of a document, and any other notes to anyone looking at the code. Comments help you and others understand your code and increases code readability.

HTML comments are placed in between **<!-- ... -->** tags. So, any content placed with-in <!-- ... --> tags will be treated as comment and will be completely ignored by the browser.

Valid vs Invalid Comments

Comments do not nest which means a comment cannot be put inside another comment. Second the double-dash sequence "--" may not appear inside a comment except as part of the closing --> tag. You must also make sure that there are no spaces in the start-of comment string.

```
<!DOCTYPE html>
<html>

   <head>
      <title>Valid Comment Example</title>
   </head>

   <body>
      <!--   This is valid comment -->
      < !--   This is not a valid comment -->

      <p>Document content goes here.....</p>
   </body>

</html>
```

Multiline Comments

You can comment multiple lines by the special beginning tag <!-- and ending tag --> placed before the first line and end of the last line as shown in the given example below.

```
<!DOCTYPE html>
<html>

   <head>
      <title>Multiline Comments</title>
   </head>

   <body>
      <!--
         This is a multiline comment and it can
         span through as many as lines you like.
      -->

      <p>Document content goes here.....</p>
   </body>

</html>
```

HTML Elements

An **HTML element** is defined by a starting tag. If the element contains other content, it ends with a closing tag, where the element name is preceded by a forward slash as shown below with few tags −

Start Tag	Content	End Tag
	This is paragraph content.	
<h1>	This is heading content.	</h1>
	This is division content.	

So here ** .... ** is an HTML element, **<h1>...</h1>** is another HTML element. There are some HTML elements which don't need to be closed, such as **<img.../>**, **<hr />** and **
** elements. These are known as **void elements**.

HTML documents consists of a tree of these elements and they specify how HTML documents should be built, and what kind of content should be placed in what part of an HTML document.

Nested HTML Elements

It is very much allowed to keep one HTML element inside another HTML element −

Example

```
<!DOCTYPE html>
<html>

   <head>
      <title>Nested Elements Example</title>
   </head>

   <body>
      <h1>This is <i>italic</i> heading</h1>
      <p>This is <u>underlined</u> paragraph</p>
   </body>
```

```
</html>
```

HTML Attributes

An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. All attributes are made up of two parts – a name and a value

- The name is the property you want to set. For example, the paragraph <p> element in the example carries an attribute whose name is align, which you can use to indicate the alignment of paragraph on the page.
- The value is what you want the value of the property to be set and always put within quotations. The below example shows three possible values of align attribute: left, center and right.

Attribute names and attribute values are case-insensitive.

Example

```
<!DOCTYPE html>
<html>

   <head>
      <title>Align Attribute  Example</title>
   </head>

   <body>
      <p align = "left">This is left aligned</p>
      <p align = "center">This is center aligned</p>
      <p align = "right">This is right aligned</p>
   </body>

</html>
```

This will display the following result –

Core Attributes

The four core attributes that can be used on the majority of HTML elements (although not all) are –

- Id
- Title

- Class
- Style

The Id Attribute

The **id** attribute of an HTML tag can be used to uniquely identify any element within an HTML page. There are two primary reasons that you might want to use an id attribute on an element –

- If an element carries an id attribute as a unique identifier, it is possible to identify just that element and its content.
- If you have two elements of the same name within a Web page (or style sheet), you can use the id attribute to distinguish between elements that have the same name.

We will discuss style sheet in separate tutorial. For now, let's use the id attribute to distinguish between two paragraph elements as shown below.

Example

```
<p id = "html">This para explains what is HTML</p>
<p id = "css">This para explains what is Cascading Style Sheet</p>
```

The title Attribute

The **title** attribute gives a suggested title for the element. They syntax for the **title** attribute is similar as explained for **id** attribute –

The behavior of this attribute will depend upon the element that carries it, although it is often displayed as a tooltip when cursor comes over the element or while the element is loading.

Example

```
<!DOCTYPE html>
<html>

   <head>
      <title>The title Attribute Example</title>
   </head>

   <body>
      <h3 title = "Hello HTML!">Titled Heading Tag Example</h3>
   </body>

</html>
```

Now try to bring your cursor over "Titled Heading Tag Example" and you will see that whatever title you used in your code is coming out as a tooltip of the cursor.

The class Attribute

The **class** attribute is mostly used to point to a class in a style sheet. However, it can also be used by a JavaScript (via the HTML DOM) to make changes to HTML elements with a specified class.

The class attribute specifies one or more class names for an element. The value of the attribute may also be a space-separated list of class names. For example –

class = "className1 className2 className3"

The style Attribute

The style attribute allows you to specify Cascading Style Sheet (CSS) rules within the element.

```
<!DOCTYPE html>
<html>

   <head>
      <title>The style Attribute</title>
   </head>

   <body>
      <p style="font-family:arial; color:#FF0000;">Some text...</p>
   </body>

</html>
```

HTML Headings (<head>)

The <head> tag is a container of various important tags like <title>, <meta>, <link>, <base>, <style> and <script>tags.

- The HTML <title> tag is used for specifying the title of the HTML document.
- The HTML <meta> tag is used to provide metadata about the HTML document which includes information about page expiry, page author, list of keywords, page description etc.
- The HTML <base> tag is used for specifying the base URL for all relative URLs in a page, which means all the other URLs will be concatenated into base URL while locating for the given item.

- The HTML <link> tag is used to specify relationships between the current document and external resource.
- The HTML <style> tag is used to specify style sheet for the current HTML document.
- The HTML <script> tag is used to include either external script file or to define internal script for the HTML document.

Example:

```
<!DOCTYPE html>
<html>

   <head>
      <title>HTML Title Tag Example</title>

       <meta name = "keywords" content = "C, C++, Java, PHP, Perl,
Python">

      <!-- Provide description of the page -->
      <meta name = "description" content = "Simply Easy Learning by
Tutorials Point">

       <base href = "https://www.sdjic.org/" />
       <link rel = "stylesheet" type = "text/css" href =
"/css/style.css">
       <style type = "text/css">
          .myclass {
             background-color: #aaa;
             padding: 10px;
          }
       </style>
       <script type = "text/JavaScript">
          function Hello() {
             alert("Hello, World");
          }
       </script>

   </head>

   <body>
      <a href = "/html/index.htm" title = "SDJIC"/>Welcome To
SDJIC</a>
       <input type = "button" onclick = "Hello();" name = "ok" value
= "OK"  />

   </body>

</html>
```

Text Formatting Tags

** :**

Anything that appears within **... and …** element, is displayed in bold.

:

Anything that appears within **...** element is displayed in italicized.

<u>:

Anything that appears within **<u>...</u>** element, is displayed with underline.

<strike>:

Anything that appears within **<strike>...</strike>** element is displayed with strikethrough, which is a thin line through the text.

<sup>:

The content of a **^{...}** element is written in superscript; the font size used is the same size as the characters surrounding it but is displayed half a character's height above the other characters.

<sub>:

The content of a **_{...}** element is written in subscript; the font size used is the same as the characters surrounding it, but is displayed half a character's height beneath the other characters.

<ins>:

Anything that appears within **<ins>...</ins>** element is displayed as inserted text.

<del>:

Anything that appears within **~~...~~** element, is displayed as deleted text.

:

The tag is used to define emphasized text. The content inside is typically displayed in *italic*.

<mark>:

The <mark> tag defines text that should be marked or highlighted.

<small>:

The content of the **<small>...</small>** element is displayed one font size smaller than the rest of the text surrounding it.

<big>:

The content of the **<big>...</big>** element is displayed one font size larger than the rest of the text surrounding it